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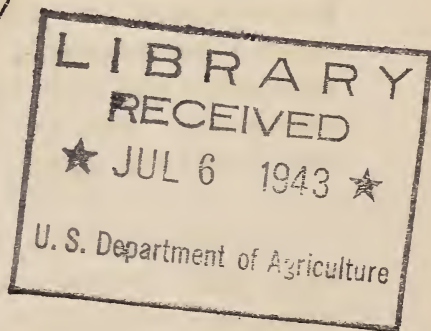
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INCREASED FEED PER COW

ITS EFFECT ON WARTIME BEEF
CATTLE PRODUCTION AND
RANGE FORAGE MANAGEMENT



BY

over
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INCREASED FEED PER COW--

ITS EFFECT ON WARTIME BEEF CATTLE PRODUCTION AND RANGE FORAGE IMPROVEMENT

THAT OVERGRAZING, LIGHT COW AND CALF WEIGHTS, LOW CALF CROPS, HIGH DEATH LOSSES AND LOW FORAGE PRODUCTION ARE ALL LINKED TOGETHER IS A FACT AGREED UPON BY STOCKMEN AND OTHERS CONCERNED WITH LIVESTOCK MANAGEMENT. THE EFFECTS OF OVERGRAZING ON PLANT VIGOR AND VOLUME GROWTH OF FORAGE HAVE BEEN WIDELY RECOGNIZED. BUT THE EFFECT OF INCREASED OR REDUCED FEED PER ANIMAL ON PRODUCTION PER HEAD OF LIVESTOCK AND ON TOTAL LIVESTOCK PRODUCTION HAS NOT RECEIVED EQUAL EMPHASIS.

THE UNDERLYING CONNECTION BETWEEN REDUCED FEED PER ANIMAL, LIGHT WEIGHTS, LOW CALF CROPS, ETC., IS PRIMARILY THE FACT THAT ABOUT 60 PERCENT OF THE TOTAL FEED CONSUMED BY A WELL-NOURISHED BEEF COW GOES INTO MAINTENANCE AND THE REMAINING 40 PERCENT INTO GAIN OR PRODUCTION. A GROWING CALF USES MORE THAN ONE-HALF OF ITS TOTAL FEED FOR MAINTENANCE. IF THE AMOUNT OF FEED AVAILABLE TO THE ANIMAL IS REDUCED BECAUSE OF OVERSTOCKING OR LOW FORAGE PRODUCTION, THE SAME AMOUNT OF FEED IS STILL REQUIRED FOR MAINTENANCE, LEAVING A LESSER AMOUNT TO BE REFLECTED IN GAIN.

IT FOLLOWS THEN, THAT THE KEY TO THIS WHOLE CHAIN OF RELATED FACTORS IS THAT OF PROVIDING, IN ONE WAY OR ANOTHER, INCREASED FEED PER ANIMAL. AND, STUDIES WHICH HAVE BEEN MADE, THE EXPERIENCE OF LIVESTOCK GROWERS, PLUS A LITTLE ARITHMETIC, SHOW CONCLUSIVELY THAT INCREASED FEED PER ANIMAL

DOES PAY DIVIDENDS IN ALL PHASES OF RANGE AND LIVESTOCK CONDITIONS AND PRODUCTION.

BRIEFLY STATED, THE RESULT OF THESE STUDIES ON BEEF CATTLE PRODUCTION IN THE WEST INDICATE THAT MORE POUNDS OF BEEF CAN BE PRODUCED AND FORAGE PRODUCTION INCREASED AND IMPROVED IF A HERD IS ADJUSTED TO AVAILABLE FEED SO THAT COWS WILL REACH MAXIMUM WEIGHT AND PRODUCE HIGH CALF CROPS.

IN THE TABLES WHICH FOLLOW, IT IS NECESSARY TO EXPRESS ALL FEED REQUIREMENTS IN TERMS OF "DIGESTIBLE NUTRIENTS" SINCE VARIOUS KINDS OF FEED HAVE DIFFERENT NUTRITIONAL VALUES. ROUGHLY, TWO POUNDS OF CURED RANGE FORAGE ARE CONSIDERED THE EQUIVALENT OF ONE POUND OF DIGESTIBLE FORAGE.

TABLE NO. 1 (SEE P.4) SHOWS, IN ITS SIMPLEST CONCLUSIONS, THE RESULT OF FEEDING TO PRODUCE OPTIMUM COW WEIGHTS. 1/

ANOTHER WAY OF EXPRESSING THE EFFECT OF INCREASED FEED PER ANIMAL IS TO BEGIN WITH A CERTAIN AMOUNT OF FEED, SAY 484,000 POUNDS OF DIGESTIBLE NUTRIENTS, OR ABOUT 968,000 POUNDS OF CURED RANGE FORAGE, WHICH IS APPROXIMATELY THE OPTIMUM FORAGE REQUIREMENT FOR 100 COWS MATURING AT ABOUT 1000 POUNDS EACH, AND COMPARE THE PRODUCTION OF A 100-COW HERD WITH THAT OF LARGER HERDS CONSUMING THE SAME AMOUNT OF FEED. THESE COMPARISONS ARE SHOWN IN TABLE NO. 2 (SEE P. 5).

1/ FIGURES USED IN THIS PAPER ARE BASED ON STUDIES MADE BY THE NEW MEXICO AGRICULTURAL EXPERIMENT STATION, AND ON WORK BY T. W. GULLICKSON AND C. H. ECKLES OF THE MINNESOTA AGRICULTURAL EXPERIMENT STATION AS REPORTED ON PAGE 627 OF THE USDA YEARBOOK, "FOOD AND LIFE."

TABLE J.--EFFECT OF FEED PER COW ON SELECTED FACTORS
OF BEEF PRODUCTION

BEEF PRODUCTION FACTORS	POUNDS OF NUTRIENTS PER COW PER YEAR*									
	4840	4550	4310	4070	3820	3570	3320			
WEIGHT PER COW, LBS.	1000	900	850	800	750	700	650			
WEIGHT PER CALF, LBS.	400	380	360	340	320	300	280			
CALF CROP, PERCENT	90	80	70	60	50	40	30			
NUTRIENTS PER POUND OF										
BEEF PRODUCED, LBS.	14	13	15	17	20	25	34			
BEEF SOLD PER 1000 LBS. OF NUTRIENTS, LBS.	88	78	69	60	49	40	29			
CALF WEIGHT, PERCENT OF TOTAL SALES	70	68	66	62	57	51	40			
PERCENT OF FEED TO MAINTENANCE OF COW	60	62	64	66	68	70	72			

*INCLUDES FEED FOR CALVES AND REPLACEMENT HEIFERS.

TABLE 2.--BEEF PRODUCTION FROM 484,000 POUNDS OF
NUTRIENTS CONSUMED BY HERDS OF VARYING NUMBERS

ITEM	NUMBER OF COWS IN HERD									
	100	106	112	119	126	135	146			
NUTRIENTS PER COW,										
LBS.	4,840	4,550	4,340	4,070	3,820	3,570	3,320			
COW WEIGHT, LBS.	1,000	900	850	800	750	700	650			
CALVES RAISED,										
NUMBER	90	85	78	71	63	54	44			
HEIFER CALVES FOR										
REPLACEMENT, NO.	16	16	17	19	20	22	23			
CALVES FOR SALE,										
NUMBER	74	69	61	52	43	32	20			
COWS FOR SALE,										
NUMBER	13	13	13	14	14	13	13			
TOTAL WEIGHT OF										
CALVES SOLD, LBS.	29,800	26,000	21,900	17,900	13,800	9,800	5,700			
TOTAL WEIGHT OF										
COWS SOLD, LBS.	13,000	11,900	11,400	11,000	10,200	9,400	8,500			
TOTAL WEIGHT OF										
CATTLE SOLD, LBS.	42,800	37,900	33,300	28,900	24,000	19,200	14,200			

OUT OF MANY STRIKING COMPARISONS THIS TABLE OFFERS, PERHAPS THE MOST INTERESTING IS THE FINAL ONE OF TOTAL POUNDS OF BEEF SOLD. THE 100-COW HERD, WITH ENOUGH FEED TO MATURE 1000-POUND COWS, CAN PRODUCE 28,600 MORE POUNDS OF MARKETABLE BEEF THAN A HERD OF 146 COWS GETTING THE SAME TOTAL QUANTITY OF FEED, IN WHICH CASE THE REDUCED FEED PER ANIMAL LIMITS THE INDIVIDUAL COW WEIGHT TO 650 POUNDS.

EXPERIENCE OF WESTERN STOCKMEN AND STUDIES BY THE EXPERIMENT STATIONS SHOW THAT, ORDINARILY, INCREASING THE QUANTITY OF FEED PER HEAD ALSO DECREASES DEATH LOSSES FROM POISON WEEDS, CALVING AND GENERAL WEAKNESS. IN MORE DETAILED COMPUTATIONS FROM WHICH TABLES NOS. 1 AND 2 HAVE BEEN DERIVED, DEATH LOSSES WERE ASSUMED TO VARY FROM 2 PERCENT IN COW HERDS OF 1000-POUND COWS TO 6 PERCENT IN HERDS OF 650-POUND COWS. FOR TWO-YEAR-OLDS, THE DEATH LOSSES VARIED FROM 1.8 PERCENT TO 3.6 PERCENT, AND FOR YEARLINGS, FROM 1.5 PERCENT TO 3.3 PERCENT IN THE TWO CLASSES OF HERDS.

IT SHOULD NOT BE PRESUMED THAT NUTRITION EXPLAINS ALL OF THE VARIATIONS IN CALF CROPS, DEATH LOSSES OR WEIGHTS OF ANIMALS. ALTHOUGH MANY FACTORS OF RANCH MANAGEMENT PLAY A PART, A PLENTY OF FEED PER ANIMAL IS THE KEYNOTE TO EFFICIENT PRODUCTION. WE CANNOT PUNISH RANGE WITHOUT PUNISHING LIVESTOCK.

MOST STOCKMEN AND LIVESTOCK SPECIALISTS AGREE THAT EXCESSIVE GRAZING OF RANGE LAND RESULTS IN REDUCED FORAGE OVER A PERIOD OF YEARS AND A REDUCED AMOUNT OF FEED FOR EACH ANIMAL IN ANY YEAR.

IT IS RECOGNIZED THAT ANIMALS MUST TRAVEL FARTHER TO GET FEED ON AN OVERGRAZED RANGE, JUST AS IT IS RECOGNIZED THAT OVERGRAZING HAS A DAMAGING EFFECT ON PLANT VIGOR, ON THE VOLUME OF FORAGE, AND ON THE PROPER CONSERVATION OF SOIL AND MOISTURE, THE BASIC ESSENTIALS OF ALL AGRICULTURE.

JUST NOW IT IS PARTICULARLY IMPORTANT TO KNOW THAT CATTLEMEN CAN ACTUALLY PRODUCE MORE BEEF WITH ANY GIVEN AMOUNT OF FORAGE IF THEY WILL BE SURE THEIR HERDS ARE ADJUSTED SO THAT EVERY ANIMAL GETS SUFFICIENT FEED FOR OPTIMUM PRODUCTION. IN THIS WAY THE RANGE LANDS OF THE WEST CAN PRODUCE MORE BEEF SO VITALLY NEEDED FOR VICTORY IN THIS WAR WHICH HAS PLACED ON RANCHERS AND FARMERS OF THIS COUNTRY THE GREATEST RESPONSIBILITY IN THE HISTORY OF AMERICAN AGRICULTURE.

